

CLAIMS

1. A receiver comprises:
 - a control unit which outputs control information necessary for generating processing of despreading codes, and address information and timing information necessary for reading-out processing of despreading codes;
 - a despreading-code generating unit which continuously generates despreading-codes, based on the control information;
 - a code storage unit which stores the despreading codes for each address corresponding to delay time of multi-paths;
 - a plurality of code reading-out units each of which receives the despreading codes, which have been read out based on the address information, corresponding to each path, and outputs the received despreading-codes based on the timing information;
 - a plurality of demodulating units each of which separately demodulates the received signals, using the despreading codes corresponding to each path; and
 - a combining unit which combines all the demodulated signals.
 2. The receiver according to claim 1, wherein the code storage unit performs, according to a time sharing base, writing-in processing of despreading codes for the like chip

interval, and reading-out processing of codes accumulated for the like chip interval.

3. The receiver according to claim 1, wherein the
5 despreadng-code generating unit outputs despreadng codes
for one period based on the control signal, and, thereafter,
stops the operation.

4. The receiver according to claim 3, wherein the
10 despreadng-code generating unit further outputs new
despreadng codes for one period based on the control signal
in the case of changes in the despreadng codes, and,
thereafter, stops the operation.

15 5. The receiver according to claim 1, wherein the code
storage unit further has a configuration where conversion
from serial data of one bit to parallel data of plural bits
is performed at writing-in operation of the despreadng
codes; the converted parallel data are simultaneously
20 written in; conversion from parallel data of plural bits,
which have been simultaneously read out, to serial data of
one bit is performed at subsequent reading-out operation;
and the converted serial data are output to the code
reading-out section one by one.

6. The receiver according to claim 1, further comprising:
a plurality of combinations of the code storage unit,
the code reading-out unit, and the demodulating unit; and
a selection unit which selects any one of the plurality
5 of code storage units,

wherein the despreading codes are stored in the code
storage unit selected by the selection unit.

7. The receiver according to claim 6, further comprising:
10 a plurality of the despreading-code generating units,
wherein the despreading codes generated in each
despreading generating unit are stored in the code storage
unit selected by the selection unit.

15 8. The receiver according to claim 1, wherein the
despreading-code generating unit generates M sequence codes
by calculating an exclusive-OR of arbitrary bit outputs in
a shift register.

20 9. The receiver according to claim 8, wherein the
despreading codes are generated by provision of plurality
of the despreading-code generating unit, and by calculating
an exclusive-OR of the outputs of each despreading-code
generating unit.

10. A method of generating despreading-codes for a receiver which separately demodulates received signals in a multi-path communication environment, using despreading codes corresponding to each path, the method comprising:

5 a despreading-code generating step of continuously generating despreading-codes, based on control information necessary for generating processing of despreading codes;

a code storage step of storing the despreading codes for each address corresponding to the delay time of 10 multi-paths; and

a plurality of code reading-out steps for receiving the despreading codes, which have been read out based on the address information, corresponding to each path, and for outputting the received despreading codes based on predetermined timing information.

11. The method of generating despreading-codes according
to claim 10, wherein the code storage step performs
writing-in processing of despreading codes for the like chip
interval, and reading-out processing of codes accumulated
for the like chip interval according to the time sharing
base.

12. The method of generating despreading-codes according to claim 10, wherein the despreading code generating step outputs despreading codes for one period based on the control signal, and, thereafter, stops the operation.

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13. The method of generating despreading-codes according to claim 12, wherein the despreading code generating step further outputs new despreading codes for one period based on the control signal in the case of changes in the despreading
10 codes, and, thereafter, stops the operation.

14. The method of generating despreading-codes according to claim 10, wherein the code storage step comprises:

15 performing conversion from serial data of one bit to parallel data of plural bits at writing-in operation of the despreading codes;

simultaneously writing in the converted parallel data and subsequently;

20 performing conversion from parallel data of plural bits, which have been simultaneously read out, to serial data of one bit at reading-out operation; and

outputting the converted serial data one by one.

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15. The method of generating despreading-codes according to claim 10, wherein the despreading codes are generated for each process by provision of a plurality sets comprising a series of the code storage step and the code reading-out step, and by further inclusion of a selection step of selecting any one of the plural sets of processes.